



METALLURGICAL TEST REPORT

6870 Highway 42 East
Ghent, KY 41045-9615
(502) 347-6000

Certificate: 666051 08

Mail To:

A.M. CASTLE AND COMPANY
3400 NORTH WOLF ROAD
FRANKLIN PARK IL 60131

Customer: 0032 001

NAS Order: LN 74495 3

Your Order: 118950

Item Code: 14836

Ship To:


A.M. CASTLE AND COMPANY
3400 NORTH WOLF ROAD
FRANKLIN PARK IL 60131

Date: 8/23/2011 Page: 1 Of 1

Steel: 304/304L

Finish: Cold Finish

Dia/Thk: 1.5000 in

Leg Length: 

Length: 144.00 in

Corrosion: ASTM A262 Prac A/E OK

PRODUCT DESCRIPTION:
<p>1. Product Name: [Product Name]</p> <p>2. Category: [Category]</p> <p>3. Manufacturer: [Manufacturer]</p> <p>4. Material: [Material]</p> <p>5. Weight: [Weight]</p> <p>6. Dimensions: [Dimensions]</p> <p>7. Color: [Color]</p> <p>8. Features: [Features]</p> <p>9. Usage: [Usage]</p> <p>10. Warranty: [Warranty]</p>

ASTM A193/10a-ASME SA193/10 CL 1 GR B8(EXC PAR 7.2)

GRAIN SIZE= 6-8

Round Bar, Annealed, Smooth Turned, Cold Finished

UNS 30400/30403, EN 10204 3.1, ASTM A484/08

ONE 2030/3040J, TWO 2030/3040E/V8
ASTM A276/10, ASTM A479/10a, ASTM A182/10 CHEM ONLY.

ASME SA479/10a. ASME SA182/10 CHEM ONLY

AMS 5639H. AMS 5647H. AMS 00S-763B. 00S-763F
FABRIC BA#15/10B, ASME SA182/10 CHEM ONLY

AMS 5639H, AMS 5647H, AMS QQS-763B, QQS-763F

REMARKS:

COMPLIES W/REQUIREMENTS OF DEARS EU DIRECTIVE 2002-95.

COMP LIES W/ REQUIREMENTS OF DEARS EQ DIRECTIVE 2002-93.
EC- BOHS- EAF+AOD+CC- NO WELD REPAIR. MELTED AND MEG IN USA

EC: ROHS: EAF+AOB+CC: NO WELD REPAIR: MELTED AND MFG FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight
ED99434	2194								

CHEMICAL ANALYSIS

Relat	Supplier #	CM	C	CO	CR	CU	MN	MO	N	NT	P	S
9NN2		US	.020	.08	18.14	.35	1.34	.28	.076	8.57	.030	.0235
SI												
.24												

MECHANICAL PROPERTIES

1 d o i c f	HB	No.	.2YS KSI	UTS KSI	RA %	ELng % 4D
BD99434 R L	158.0	51.58	91.84	71.55	46.07	

NAS hereby certifies that the analysis on this certification is correct and the material meets the specifications stated.

QC ENGINEER

ERIC HESS



Castle Metals®

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No:1018982

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL_FLEET	BOL No 1018982-5			

Shipment Details		Final Destination Branch - MON	
-------------------------	--	---------------------------------------	--

Order No 1742903	Line No 7	Item No 8448	Description 1.5000.4.0000.RECT.6061.T6511.ALUMINUM.EXT.144.0000 SPECIFICATIONS: AMS QQ-A-200/8,ASTM B221				
Purchase Order No 15065	Part Number		Ordered Qty 12.00 FT	Invoice Qty 12 FT			
Details							
Delivery No. 97710319	Mill KAISER ALUMINUM	Heat Number C5608 207	Mech Id	PCS 1~	Width (IN)	Length (IN) 144	Shipped Qty(LBS) 84.6

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.	
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
Reviewed by Authorized Castle Metals Representative:	Date: Name:

Call 10/13

Castle Metals FP

HEAT NUMBER C5608, 207
MECHANICAL ID _____
ITEM CODE 8448
LOT NUMBER _____
PO NUMBER 132603
RECEIPT DATE 9/9/11
SUPPLIER Kaiser
SPECIFICATION _____
LCS NO
COMMENT _____
APPROVED BJ

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
5205 KAISER DRIVE
KALAMAZOO, MI 49048

8/11/13

CUSTOMER PO NUMBER: 132603-1		CUSTOMER PART NUMBER: 8448		PRODUCT DESCRIPTION: 1.500 X 4.000 SC RECT BAR	
KAISER ORDER NUMBER: 602383	LINE ITEM: 001	SHIP DATE: 09/08/2011	KAISER LOT NUMBER: C5608 207	ALLOY: 6061	TEMPER: T6511
WEIGHT SHIPPED: 1016.000 LB	QUANTITY: 12.000 PCS	B/L NUMBER: 601371	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: CASTLE METALS 3400 N. WOLF RD FRANKLIN PARK, IL 60131 USA			SOLD TO: A. M. CASTLE & CO. 1420 KENSINGTON ROAD OAK BROOK, IL 60523 USA		

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CONDUCT.	BEND
XTR000757	0001	1	44.5	42.3	10.1	RE 96	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
L26099	.75	.36	.28	.10	.95	.09	.10	.02	.00	.00	.00	.01	.04

Applicable Requirements:

ASTM-B221-08-STENCILED ASME-SB221 1998 SECT II AMS-QQ-A-200/8 UNS#96061 (T6511 also conforms to T6-not applicable to other tempers)

Miscellaneous Notes

MANUFACTURED IN USA (PLAINFIELD, IL) MELTED IN USA

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

Alex Yeh, Quality & Technology Manager

Alex Yeh

Plant Serial: 00006452

Kaiser Order Number: 602383

Page 1 of 1

Line Item: 001



Castle Metals®

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No:1018982

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier LOCAL_FLEET	BOL No 1018982-5		

Shipment Details Final Destination Branch - MON

Order No 1742903	Line No 9	Item No 8442	Description 1.5000.2.0000.RECT.6061.T6511.ALUMINUM.EXT.144.0000 SPECIFICATIONS: AMS QQ-A-200/8,ASTM B221			
Purchase Order No 15065		Part Number	Ordered Qty 12.00 FT	Invoice Qty 12 FT		
Details						
Delivery No. 97910310	Mill SERVICE CENTER METALS LLC	Heat Number 201109648	Mech Id	PCS 1	Width (IN)	Length (IN) 144
					Shipped Qty(LBS) 42.24	

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.	
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
Reviewed by Authorized Castle Metals Representative:	Date: Name:

Signature
2011/10/13



SERVICE CENTER METALS
5850 Quality Way
Prince George, VA 23875

CERTIFIED INSPECTION REPORT AND TEST RESULTS FOR EXTRUDED PRODUCTS

OUR ORDER NUMBER	ITEM
129481	1

BILL TO A. M. SHIP TO A. M.	Quantity Certified	2,052 lbs	48pcs	MANIFEST NUMBER 134848	DIE NUMBER RB0138	DATE OF SHIPMENT 7/1/2011	CERTIFICATION ASTM-B221-08 StencilContinuous
				CUSTOMER PO 118367	ALLOY/TEMPER 6061-T6511	SALESPERSON David Schroeder	SPECIFICATION AMS-QQA-200/8
				CUSTOMER PART NUMBER 8442	DESCRIPTION SCRB 1.500X2.000		SPECIFICATION A96061-20

We hereby certify that the material covered by this report has been inspected in accordance with the most recent certification items produced and certified as 6061-T6511 also revision, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown. SCM extrusions are manufactured in the USA from ingot melted and cast in the United States or Canada.

Mechanical Properties

Test No.	Lot No.	Test Date	Ultimate Tensile Strength (KSI)	Yield Strength (KSI)	Percent Elongation
1	201109648	06/20/11	46.6	41.3	16.3
2	201109648	06/20/11	45.6	40.1	16.5

8/11/13

HEAT NUMBER Castle Metals KC
MECHANICAL ID 201109648
ITEM CODE 8442
LOT NUMBER 55289
PO NUMBER 118367
RECEIPT DATE 7-1-11
SUPPLIER SCM
SPECIFICATION _____
LCS _____
COMMENT _____
APPROVED CO

Chemical Composition for Aluminum Alloy 6061

Cast Number	Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Melted In
0611003	6061	0.72	0.38	0.31	0.10	0.84	0.12	0.05	0.02	United States of America

Print Date: 7/1/2011

Calvin J. Wiggins, Director of Quality & Technical Services



Castle Metals®

A. M. Castile & Co.

PACKING SLIP

Page 1 of 1

Shipment No:1018982

Ship From: A. M. Castile & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL_FLEET	BOL No 1018982-5			

Shipment Details		Final Destination Branch - MON	
-------------------------	--	---------------------------------------	--

Order No 1742903	Line No 14	Item No 9166	Description 1.2500.2.0000.FLAT.17CR-4NI.STAINLESS.HR.ANN.PICKLE.132.00 00-156.0000 SPECIFICATIONS: AMS 5643, ASME SA564, ASTM A564, UNS S17400				
Purchase Order No 15065	Part Number		Ordered Qty 24.00 FT	Invoice Qty 25.83 FT			
Details							
Delivery No. 97695310	Mill DUNKIRK SPECIALTY STEEL, LLC	Heat Number G17814	Mech Id	PCS 2	Width (IN)	Length (IN) 155	Shipped Qty(LBS) 219.58

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.	
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castile & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
Reviewed by Authorized Castle Metals Representative:	Date: Name:

Signature
04/10/13



Dunkirk Specialty Steel, LLC

A Universal Stainless & Alloy Products Company

P.O. Box 319

830 Brigham Rd.

Dunkirk, NY 14048

Quality System Registered to
ISO9001 and AS9100

Material Certification

MILL ORDER: 0037624
PART NUMBER: 9166
P.O. NUMBER: 107110

P.O. DATE: 3/25/2011

PAGE NUMBER: 1 of 1

PRINTED: 7/19/11 10:40

S A. M. CASTLE & CO.
O T 3400 N. WOLF ROAD
L O
D

FRANKLIN PARK, IL 60131-1394

S A.M. CASTLE & CO.
H T 3400 NORTH WOLF ROAD
I O
P

FRANKLIN PARK, IL 60131

Material Description: STAINLESS STEEL FLAT BAR 17-4 HAF+ACD HOT ROLLED ANNEALED PICKLED ASME SA564 (630 condition A), UNS# S17400, Castle AMC 3174-43 Rev. 10, ASTM A564-10 (type 630 condition A), AMS 5643R,

Size: 1.2500 X 2.0000 X 132.0000 MIN/

156.0000 MAX RANDOM LENGTH

Heat Number	PNL	Wt	C	MN	SI	S	P
617814			0.025	0.75	0.27	0.002	0.018
			CR 15.86	W <0.05	V 0.06	NI 4.24	MO 0.19
			CO <0.05	CU 3.26	SN 0.006	PB	CB 0.28
			TA <0.01	AL <0.01	TI <0.01	FE	B <0.001
			O	MG	CA	SE	ER
			AG	BI	N 0.039	H	CQ

REDUCTION RATIO: 384:1

HARDNESS: 345 BHN

H900 CAP:

UTS/ KSI
205.9

24Y/S KSI
183.8

REL 12.1
R/A 42.8
HARDNESS 406 BHN

MAGNETIC PARTICLE: S/S = 0/0

FERRITE: <5

MICRO TEST: ACCEPTABLE

MACRO ETCH TEST: ACCEPTABLE

S - 1

R - 1

C - 1

THIS MATERIAL WAS SOLUTION TREATED AT A MINIMUM TEMPERATURE OF 1900°F FOR AN APPROPRIATE TIME FOLLOWED BY AIR COOLING

COUNTRY OF ORIGIN: USA

Castle Metals FP

HEAT NUMBER 617814

MECHANICAL ID

ITEM CODE 9166

LOT NUMBER

PO NUMBER 107110

RECEIPT DATE 8-16-11

SUPPLIER Dunkirk

SPECIFICATION

LCS P

COMMENT R

APPROVED

/S/John M. Berry

/S/H.J. Gawronski

Prepared by John M. Berry, QA

>H.J. Gawronski, Manager QA

07/19/11

Date

Melted and manufactured in compliance with DFARS 252.225-7014 ALT 1. Melted by USAP in Bridgeville, PA, USA. Certification IAW DIN 50 049 / EN 10204 3.1. Material complies with EU directive 2002/95/EC (RoHS). The test results shown are certified to be a correct statement of records that were derived from testing samples of the material. Results meet applicable specifications. No welding was performed on the material supplied on this order. Material is free from mercury contamination. Material is of NAFTA origin. This material was produced under the Dunkirk Specialty Steel Quality Management System documented in QP Manual, Rev. 5 dated 7/1/2011, conforming to NCA-3800. Material testing was performed as applicable in accordance with ASTM A370, A604, E8, E10, E18, E23, E45, E112, E139, E181, E572, E1019, STP-CHEM-G05, E1444, & AMS 2315. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal Law, Title 18, Chapter 47. Test results are maintained in company records.

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No: 1018982

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL_FLEET	BOL No 1018982-5			

Shipment Details	Final Destination Branch - MON
-------------------------	---------------------------------------

Order No 1742903	Line No 10	Item No 5036	Description 0.5000.2.5000.FLAT.304.STAINLESS.HR.ANN.PICKLE.132.0000-156 .0000 SPECIFICATIONS: AMS QQ-S-763,ASME SA479,ASTM A276,ASTM A479,UNS S30400			
Purchase Order No 15065	Part Number		Ordered Qty 80.00 FT	Invoice Qty 78 FT		
Details						
Delivery No. 97710319	Mill VALBRUNA CORPORATION	Heat Number 249744	Mech Id	PCS 6	Width (IN)	Length (IN) 156
					Shipped Qty(LBS) 331.5	

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.	
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
Reviewed by Authorized Castle Metals Representative:	Name: <i>Paul/10/13</i>

Castle Metals FP

HEAT NUMBER 249744
MECHANICAL ID _____
ITEM CODE 5036
LOT NUMBER _____
PO NUMBER 22170
RECEIPT DATE 11/9/09
SUPPLIER Valhalla
SPECIFICATION _____
LCS N
COMMENT _____
APPROVED [Signature]

Acciaierie Valbruna S.p.A.



36100 VICENZA (Italia) - Viale della scienza, 25 z.l.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

Cliente / Besteller/Purchaser/Cliet
VALBRUNA STAINLESS INC.
2400 TAYLOR STREET WEST
46801-FORT WAYNE, IN 46801-USA

Produttore: ACCIAIERIE VALBRUNA S.P.A.
Hersteller/Hersteller/Produktur

Oggetto Prove: Descaled Annealed Hotrolled
Prüfungszustand/Inspected/Finishing

Avviso di Spedizione: D-VI09017354
Lieferantige/Packungsbil.

Ordine nr: 25135 STOCK CAROL STR
Bestellr/Your order/Commande

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Meining process/Mode d'elaboration

CERTIFICATO DI COLLAUDO ABNAHMEPRUEFZEUGNIS INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION EN 10204 (2005) , 3.1

Certificato nr: MEST775704/2009/
Prüfung/Test/Essai

Conferma ordine nr: EI09004279
Werkz/Our Order/Ref. nr.

Marchio di Fabbrica:
Zeichen des Lieferanten
Travailleur
Sigle de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Pointon de l'essayeur



Specifiche:
Anforderungen / Requirements / Exigences

VSI 0 304/304L A
AMS-QQ-S-763 B 304/304L A
ASME SA276 2007 S30400/03 A 2
ASTM A182 2009 S30400/03 A 5
ASTM A276 2008A S30400/03 A

ASTM A370 2008

MIL-S-862 B/1 304/304L

(0) SEC.II PT.A 2007 EDITION ADD. 2008a

(1) SEC.II PT.A 2007 EDITION ADD. 2008a

(3) SEC.II PT.A 2007 EDITION ADD. 2008a

(5) Chemical analysis only and mechanical properties.

(7) * ISO 15156-3

AMS 5639 H S30400 A
ASME SA182 2007 S30400/03 A 0
ASME SA320 2007 B8 CLASS1 3
ASTM A193 2008B B8 CLASS1
ASTM A314 2008 S30400/03
ASTM A473 2001 S30400/03 6
NACE MR0175 2003 S30400/03 A 7

0Chemical analysis only and mechanical properties.

2SEC.II PT.A 2007 EDITION ADD. 2008a

4SEC.II PT.A 2007 EDITION ADD. 2008a

6Chemical analysis only.

AMS 5647 H S30403 A
ASME SA193 2007 B8 CLASS1 (1)
ASME SA479 2007 S30400/03 A (4)
ASTM A262 2002A PRACTICE E
ASTM A320 2008 B8 CLASS1
ASTM A479 2008 S30400/03 A
QQ-S-763 F 304/304L A

Qualità: 304/304L
Werkstoff/Grade/Qualité

Marca: AISI

Markenbezeichnung/Brand/Marken

Punzonatura: 304/304L
Kennzeichnung/Marking/Markierung

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descript. du produit	Dimensioni - In Abmessungen Dimensions	Tolleranza Toleranz Dimensional tolerance	Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stücke Pieces	Peso - LB Gewicht Weight Poids	Lotto nr. Losn. Lot nr. Lot nr.
0040	Flat	2,5000 x 0,5000	4B4-06B	144 / 158	249744		4.969	914000240

Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind erfüllt.
The material has been furnished in accordance with the requirements
Le matériel a été fourni conforme aux exigences

Controllo antimescolanza: OK
Verwachsungsprüfung: spezialanalytisch durchgeführt
Austenizing testing performed: OK
Controllo antimescolanza: OK

Controllo visivo e dimensionale: soddisfa le esigenze:
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional check: satisfactory
Contrôle visuel et dimensionnel: satisfaisant

TEST ALLI STATO DI FORNITURA Test on delivery condition Prüfung auf lieferbarem produkt Test à l'état de fourniture Prueba sobre el material así como entregado										
TEST	Prove/Prüfung Specimen/Proben Longitud. Spec. Werkst. Q. 100 Long. Spec. Werkst. Q. 100	°F	Posit. Sagitt. Position Sagitt.	Snervamento Zugversuch Yield Stress Lime d'essai Rp 0,2% k.s.l.	Snervamento Zugversuch Yield Stress Lime d'essai	Resistenza Zugfestigkeit Tensile Strength Résistance à la traction Rm k.s.l.	Allungamento Zugdehnung Elongation Allongement E 4d %	Strizione Zugversuch Reduction of area Striction RA %	Resilienza Kerbschlagenergie Impact Value Resilience	Durezza Härte Hardness Dureté HB
Valori richiesti 1 Anforderungen/Requisiten Values demandées		min max		30	-	75 115	40	50	-	140 235
A	12,5	68	L	55		93	57	67		184
TEST				min	max					
A	Grain size for ASTM E112						6			

1) L - longitudinal, F - transversal, O - Tangential

Mechanical properties according to ASTM A370.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata - steel Schmelze/Steel	min - max 0,030	1,00	2,00	18,00 20,00	1,00	1,00	8,00 10,50	-	-	0,040	0,020 0,030	0,100	-	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %					
249744	0,023	0,56	1,64	18,21	0,48	0,53	8,04	0,110	0,032	0,022	0,085					

Produced without class I-II Ozone depleting substances.

Solution heat treated free from continuous carbide network.

Annealing temperature: 1940 °F for 0.5 h water.

Micro and macro etch test: OK

Vicenza, 25/08/09 VCC008 (Mod. MCEI)	Il collaudatore di stabilimento / der Werkssachverständiger / Works inspector / L'agent d'usine M. Rizzotto	Pagina - 1 di 2
--	--	-----------------

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No:1018982

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL FLEET	BOL No 1018982-5			

Shipment Details

Order No 1742903	Line No 12	Item No 21305	Description 0.7500.6.0000.RECT.6061.T6511.ALUMINIUM.EXT.144.0000 SPECIFICATIONS: AMS QQ-A-200/8,ASTM B221				
Purchase Order No 15065	Part Number		Ordered Qty 24.00 FT	Invoice Qty 24.00 FT			
Details		Heat Number 201113791	Mech Id PCS	Width (IN)	Length (IN) 144	Shipped Qty(LBS) 126.96	
Delivery No. 97619317	Mill SERVICE CENTER METALS LLC						

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Date:

Name:

Call 11/14/13



CERTIFIED INSPECTION REPORT AND TEST RESULTS FOR EXTRUDED PRODUCTS

SCM
5850 Quality Way
Prince George, VA 23875

OUR ORDER NUMBER	ITEM
134584	1

BILL TO A. M. Castle and Company
SHIP TO A. M. Castle and Company
Quantity Certified 952 lbs 15 pcs

MANIFEST NUMBER 139765
CUSTOMER PO 132783
CUSTOMER PART NUMBER 21305

DIE NUMBER PL0121
ALLOY / TEMPER 6061-T6511
DESCRIPTION PL .750x6.000

DATE OF SHIPMENT 9/9/2011
SALESPERSON David Schroeder

CERTIFICATION ASTM-B221-08 StencilContinuous
SPECIFICATION AMS-QQA-200/8
SPECIFICATION A96061-20

Items produced and certified as 6061-T6511 also meet the requirements of 6061-T6

Mechanical Properties

Test No.	Lot No.	Test Date	Ultimate Tensile Strength (KSI)	Yield Strength (KSI)	Percent Elongation
1	201113791	09/07/11	50.3	46.2	16.6
2	201113791	09/07/11	50.3	46.1	16.7
3	201113791	09/07/11	50.4	45.7	15.3

CASTLE METALS - CLE

HEAT NUMBER 20113791

MECHANICAL ID 21305

ITEM CODE 165283

LOT NUMBER 182783

PS 9-10-11

Scm

JB

Chemical Composition for Aluminum Alloy 6061

Cast Number	Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Melted In
C29J1004	6061	0.72	0.39	0.31	0.09	0.86	0.10	0.01	0.02	United States of America
C29J1017	6061	0.75	0.36	0.34	0.12	0.91	0.10	0.01	0.02	

Calvin J. Wiggins

Calvin J. Wiggins, Director of Quality & Technical Services

Print Date: 9/9/2011

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No: 1018982

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL_FLEET	BOL No 1018982-5			
Shipment Details				Final Destination Branch - MON			
Order No 1742903	Line No 11	Item No 23232	Description 0.7500.8.0000.RECT.6061.T6511.ALUMINUM.EXT.144.0000 SPECIFICATIONS: AMS QQ-A-200/8,ASTM B221				
Purchase Order No 15065	Part Number	Ordered Qty 24.00 FT	Invoice Qty 24 FT				
Details							
Delivery No. 97643333	Mill SERVICE CENTER METALS LLC	Heat Number 201103976	Mech Id	PCS 2	Width (IN)	Length (IN) 144	Shipped Qty(LBS) 170
These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.							
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.							
Reviewed by Authorized Castle Metals Representative:				Date:		Name:	

ca/10/13



SERVICE CENTER METALS
5850 Quality Way
Prince George, VA 23875

CERTIFIED INSPECTION REPORT AND TEST RESULTS FOR EXTRUDED PRODUCTS

OUR ORDER NUMBER	ITEM
123737	1

BILL TO A. M. Castle and Company	MANIFEST NUMBER 127738	DIE NUMBER PL0183	DATE OF SHIPMENT 3/24/2011
SHIP TO A. M. Castle and Company	CUSTOMER PO 101159	ALLOY / TEMPER 6061-T6511	SALESPERSON David Schroeder
Quantity Certified	4,572 lbs	54pcs	DESCRIPTION PL 750x8.000

CERTIFICATION
ASTM-B221-08 StencilContinuous
SPECIFICATION
AMS-QQA-200/8
SPECIFICATION
A96061-20

We hereby certify that the material covered by this report has been inspected in accordance with the most recent certification revision, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown. SCM extrusions are manufactured in the USA from ingot melted and cast in the United States or Canada.

Items produced and certified as 6061-T6511 also meet the requirements of 6061-T6

Mechanical Properties

Test No.	Lot No.	Test Date	Ultimate Tensile Strength (KSI)	Yield Strength (KSI)	Percent Elongation
1	201103976	03/17/11	51.3	47.4	12.8

Chemical Composition for Aluminum Alloy 6061

Cast Number	Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Melted In
C07H0542	6061	0.69	0.27	0.33	0.10	0.87	0.10	0.01	0.01	United States of America

Print Date: 3/24/2011

Rev. 9/06/07 - UMS

Calvin J. Wiggins, Director of Quality & Technical Services

Castle Metals FP

HEAT NUMBER 201103976
MECHANICAL ID _____
ITEM CODE 23232
LOT NUMBER _____
PO NUMBER 101159
RECEIPT DATE 3-29-2011
SUPPLIER SCM
SPECIFICATION _____
LCS ND
COMMENT _____
APPROVED BL